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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,686	04/12/2006	Jean-Marie Caupain	4590-467	3794

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EXAMINER
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BUI PHO, PASCAL M

ART UNIT	PAPER NUMBER
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2878

MAIL DATE	DELIVERY MODE
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01/23/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/562,686	Applicant(s) CAUPAIN ET AL.	
	Examiner Pascal M. Bui-Pho	Art Unit 2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 9-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9, 10 and 13-16 is/are rejected.
- 7) ☒ Claim(s) 11 and 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 November 2007 and 28 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. <u>20080118</u> .                           |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application  |
| Paper No(s)/Mail Date _____.   | 6) <input type="checkbox"/> Other: _____.                          |

### DETAILED ACTION

This Office action is responsive to communications filed on 02 November 2007.

Presently, Claims 9-16 remain pending.

#### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

#### *Drawings*

2. Replacement drawings were received on 02 November 2007. These drawings are acceptable.

#### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 9, 10, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Monoi (US 6,153,874) in view of Sayag et al. (US 5,510,623).

**With regards to claim 9**, Monoi discloses in Fig. 2 an image sensor comprising: a matrix of rows and columns of photosensitive dots (5), made on an inherent chip; a reading register (31, 32) placed on the chip at the bottom of the matrix, said register being bent so as to run alongside the chip forming a horizontal part and two oblique parts, said register including an input (21, 22) configured to store in parallel signals representative of exposure of pixels to light, and an output configured to serially output corresponding signals, and a structure (6, 8) for

directing photosensitive charges of columns terminating opposite the beveled corners to register stages situated in the oblique parts alongside the beveled corners. Monoi however lacks a clear disclosure of said chip of general square or rectangular shape with beveled corners. In an analogous field of endeavor, Sayag et al. disclose in Fig. 1 an image sensor (10) comprising, among other features, a matrix of rows and columns of photosensitive dots (10A), made on a chip of general rectangular shape with beveled corners. Selecting a desired shape for optimal comfort and compactness would have been obvious to one of ordinary skill in the art. Accordingly, at the time of the invention, it would have been obvious to modify Monoi by utilizing the chip of general rectangular shape with beveled corners taught by Sayag et al. in order to minimize discomfort and provide a more compact design (Column 3, lines 6-15).

**With regards to claim 10**, Monoi and Sayag et al. disclose the image sensor set forth above, but lack a clear inclusion of insulating zones between said columns. Selecting a known available element and/or component to transfer charge more efficiently would have been obvious to one of ordinary skill in the art. Accordingly, at the time of the invention, it would have been obvious to modify Monoi and Sayag et al. by utilizing insulating zones as claimed in order to reduce cross-talk, blooming, and/or charge interference, hence generating sensing results of greater accuracy and reliability.

**With regards to claim 13**, Monoi discloses the image sensor set forth above wherein there are provided several metallic conductors (to transmit  $\phi 1$ ,  $\phi 2$ ) extending along the register and coming into contact locally with the various charge transfer electrodes constituting the rows of the matrix.

**With regards to claim 14**, Monoi discloses the image sensor set forth above wherein the reading register (31, 32) possesses a central output (4b, 7, 60), the reading register being divided into two half-registers operating in opposite senses so as to bring the charges from the left half of the matrix to the right and the charges from the right half to the left.

5. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Monoi (US 6,153,874) in view of Sayag et al. (US 5,510,623), further in view of Carroll (US 6,527,442).

**With regards to claims 15 and 16**, Monoi and Sayag et al. disclose the image sensor set forth above used in an intraoral dental radiological image capture device (Column 3, lines 6-16 of Sayag et al.), but lack a clear inclusion of said chip being covered with a scintillator. In an analogous imaging art, Carroll discloses in Figs. 1D and 3 an image sensor comprising, among other features, a matrix of rows and columns of photosensitive dots (13d, 31) made on a chip covered with a scintillator (13c). Selecting a known available element to detect electromagnetic radiation inexpensively would have been obvious to one of ordinary skill in the art. Accordingly, at the time of the invention, it would have been obvious to modify Monoi and Sayag et al. by utilizing a scintillator in order to provide higher sensing efficiency and reduce manufacturing costs.

***Allowable Subject Matter***

6. Claims 11 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

7. Applicant's arguments with respect to claims 9-16 have been considered but are moot in view of the new ground(s) of rejection or indication of allowability.

***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Telephone/Fax Information***

9. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Pascal M. Bui-Pho whose telephone number is (571) 272-2714. The Examiner can normally be reached on Monday through Friday: 8:30 a.m. - 5:00 p.m.

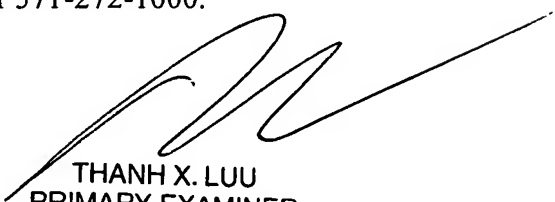
If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Georgia Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Pascal M. Bui-Pho  
Examiner, Art Unit 2878  
18 January 2008



THANH X. LUU  
PRIMARY EXAMINER